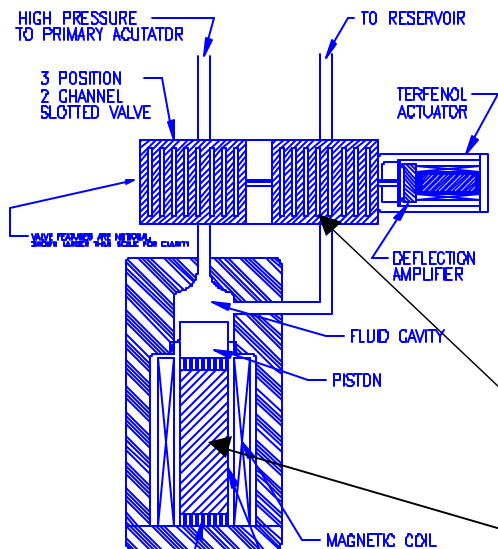


## SMART MATERIAL POWERED ELECTROHYDROSTATIC ACTUATOR

Existing Electrohydrostatic Actuators (EHA's) provide mature experimental platform for delivering *power-by-wire*  
Smart material pump enables the EHA to be scaled to compact size and high power density



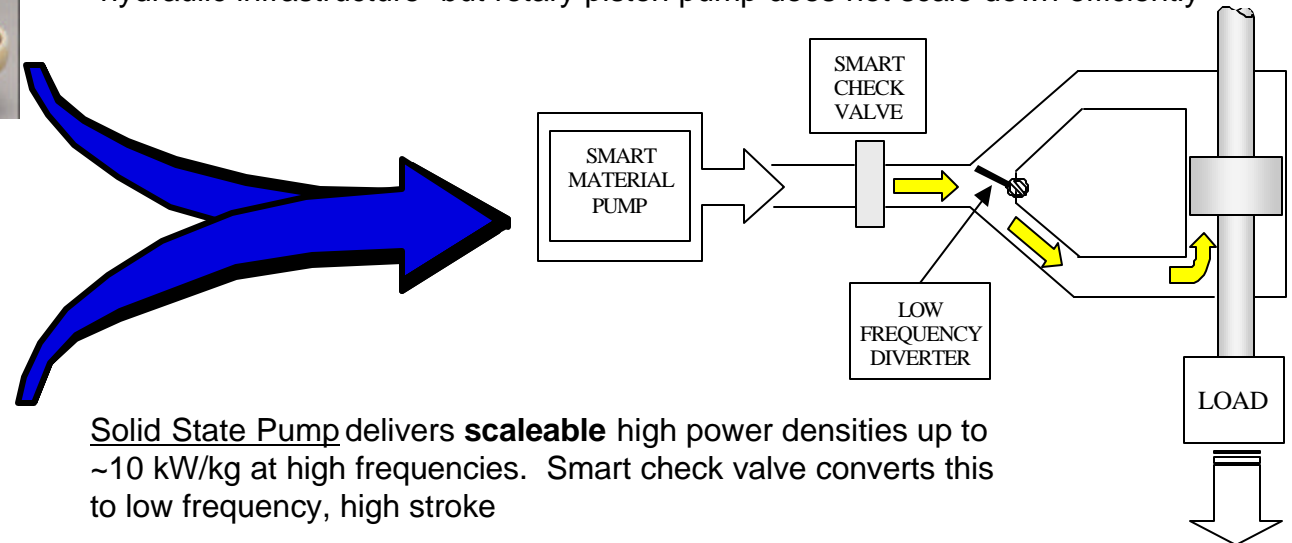
**MOOG slave hydraulic actuator**



**Smart Material pump concept**

Conventional Hydraulics provide large stroke and force but employ complex fluid pressurization and delivery systems

Electrohydrostatic Actuators generate pressure locally thereby eliminating the "hydraulic infrastructure" but rotary piston pump does not scale down efficiently



Solid State Pump delivers **scaleable** high power densities up to ~10 kW/kg at high frequencies. Smart check valve converts this to low frequency, high stroke

### **Smart Material Powered EHA**

Compact high-power-density actuator

- 3.5 in/s @ 1000 lb load
- Peak stroke 1 in
- Bandwidth >15 Hz